

## **APPENDIX B**



**Docket No.** CF/021 CON CPA

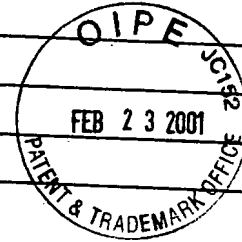
**Applicant** Philip M. Ginsberg

**Serial No.** 09/225,537

January 4, 1999

**Filed** CPA Filed July 31, 2000

**Receipt is hereby acknowledged of the**  
Transmittal Letter (in duplicate); and Preliminary  
Amendment.



**Dated** February 20, 2001

**Filed in connection with the above case.**

MTB 00718.021

**COMMISSIONER OF PATENTS  
AND TRADEMARKS**



PATENTS  
CF/021 CON CPA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant : Philip M. Ginsberg  
Application No.: 09/225,537 Confirmation No.: 2363  
Filed : January 4, 1999; CPA Filed July 31, 2000  
For : FIXED INCOME PORTFOLIO INDEX PROCESSOR  
Group Art Unit : 2164  
Examiner : Dr. Geoffrey Akers

A

Hon. Commissioner  
for Patents  
Washington, D.C. 20231

New York, New York  
February 20, 2001

PRELIMINARY AMENDMENT

Sir:

Prior to examination, please amend the above-identified patent application as follows:

In The Title

✓ Please amend the title of the invention on page 1 of the specification from "FIXED INCOME PORTFOLIO DATA PROCESSOR" to --FIXED INCOME PORTFOLIO INDEX PROCESSOR--.

In The Specification

Please amend the specification as follows:

✓ Page 1, before line 1, insert:

CROSS REFERENCE TO RELATED APPLICATIONS

This is a continuation of copending, commonly assigned United States Patent Application No. 08/396,422, filed February 28, 1995, now United States Patent No. 5,774,880, issued June 30, 1998, which is a file wrapper continuation of United States Patent Application No. 07/897,377, filed June 10, 1992, now abandoned.

FIELD OF THE INVENTION

AMENDED per A

✓At page 1, line 9, please replace the heading there with:

BACKGROUND OF THE INVENTION

✓At page 1, lines 10-19, please replace the paragraph there with:

AMENDED per A

A sizable portion of investment vehicles available in today's financial markets are universally characterized as fixed income securities. Exemplary fixed income securities will encompass government bonds, bills and notes auctioned at regular intervals by the U.S. and other foreign governments to finance governmental activities. These, of course, are some of many types of fixed income securities, others include corporate bonds, municipal bonds, etc. The common thread running between all fixed income securities is the payment of a set return to the investor over the life span of the security.

✓At page 1, line 20 through page 2, line 2, please replace the paragraph there with:

AMENDED per A

There are two forms of fixed income return to the investor. The first involves the provision of coupon payments at regular intervals, at the stated interest rate of the security. For example, a ten-year note may specify an 8% rate of interest on a \$1,000 par value with coupons coming due twice each year for ten years. This translates to two \$40 payments to the holder of the note for ten years with a final payment of \$1040 (principal and interest). The other form of bond is called a zero coupon, or discount bond which provides no payment except for the final return of the face value of the bond at a specified date (e.g. ten years from issuance). The discount bond is sold at some fraction of its face value, with the interest rate discount being a function of this and the term of the bond.

✓At page 2, lines 10-19, please replace the paragraph there with:

MEMENDED per A

Treasuries have characteristic properties that make them especially useful for the purposes of the present invention and, therefore, are used exclusively in the following discussions, with the fundamental tenet that the principles may be applied to other types of fixed income securities without departing from the inventive concepts. One important attribute of treasuries, in the context of the present invention, is the minimal and uniform default risk; the issuance of U.S. government paper removes the default risk as a defining criteria in the relative pricing of treasuries in the market place.

✓At page 3, lines 21-27, please replace the paragraph there with:

MEMENDED per A

Treasuries are sold by the government to fund projects, mandated payments and make strategic investments that cannot be paid by current receipts. Treasuries are purchased by individuals and institutions for a variety of reasons, including the protection of principal with a low risk investment vehicle and the generation of known future cash flows to fund the needs of, e.g., pension participants.

✓At page 3, line 28 through page 4, line 8, please replace the paragraph there with:

MEMENDED per A

As can be realized by the foregoing description, the very size and diversity of the treasury market implicates an unprecedented level of sophistication by market participants in the pricing and transactions involving these securities. The very complexity associated with the transactions and the scale of trading undertaken by institutional participants necessitates a rigidly structured approach in trading. The capital at stake and the fluidity of future commitments make it critical to have a method of measuring the performance of portfolio managers, so that plan sponsors for the pension plans and the like can precisely determine whether the capital under their control is properly invested.

✓At page 7, line 25 through page 8, line 3, please replace the paragraph there with:

AMENDED per A

Turning now to FIG. 1, the overall information paths of the present invention are presented in block diagram form. Beginning with block 10, market data is collected from a plurality of on-line terminals operated by traders within the relevant bond market sector. A continual exchange of information flows between the traders, depicted in block 10, and the system proprietor, block 20, i.e., as bids, offers and trades are transacted in real time. This information is collected by the system proprietor and entered into the data processor database.

✓At page 8, lines 19-31, please replace the paragraph there with:

AMENDED per A

The foregoing operation will result in the final real time index value in terms of portfolio price, portfolio yield to maturity (YTM) and portfolio duration for distribution within the fixed income investment community. In the context of the present invention, three segments of this community are provided with the data. At block 90, system proprietors involved in automated options processing are provided the index values for quantifying and closing specific options positions pursuant to the trading of option contracts on the indexed portfolio. In a similar manner, at block 110, the portfolio index data is provided to system proprietors regarding futures contracts to permit proper transactions in closing of future contracts based on the portfolio index.

✓At page 11, lines 15-22, please replace the paragraph there with:

AMENDED per A

Assuming a negative response to test 230, logic continues to test 270 wherein the instant transaction is qualified as an active (most recently auctioned issue) treasury. A positive response to test 270 branches to block 280. At block 280, the current transaction data is

assigned into the matrix of data values for actives A(I, N). Alternatively, a negative response to test 270 bypasses block 280 and the security will remain in the X(I, N) file set.

✓At page 12, lines 6-18, please replace the paragraph there with:

Continuing with Figure 2, test 290 queries whether a given security requires qualification. A positive response branches logic to block 300, where the first criteria applied involves measuring the spread between the bid and ask price currently quoted, SPD(I, N). At test 310, the current spread for that security is compared with a preset price spread maximum value, SPD<sub>max</sub>. This preset spread limit is adjustable and may be initially set at 5/32; i.e., a difference between bid and ask sides of the market of 5/32. A positive response to test 310, branches to block 320 wherein the system discards the price information for that security. This data is removed from the data set because such a wide spread reflects unusual market conditions for that security.

✓At page 12, lines 19-26, please replace the paragraph there with:

A second criteria for retaining data involves comparing current bid/ask pricing with recent bid/ask pricing for differing securities. For example, if the current ask price of a given security is less than a recent bid price of the same or analogous security, this reflects a rapid shift in market conditions rendering the recent data unreliable. This process is depicted in test 330, which is performed after performing block 320 or after a negative response to test 310, with a positive response branching to block 340 for the removal of the disqualified data.

✓At page 12, line 27 through page 13, line 4, please replace the paragraph there with:

AMENDED per A

The remaining data sets are thereafter stored in matrix address format. After removing disqualified data at block 340, determining a negative response to test 330, or determining a negative response to test 290, at block 350, the active data is stored at A(I) and, at block 360, the inactive data is stored at matrix address X(I). This is repeated for each security on the data set via next command, at block 370, and continues in real time via block 380. In fact, except for the closing data, most, if not all, incoming transactions will be received on an asynchronous basis thereby creating a fluid database for processing in connection with the following logic commands.

✓At page 14, line 25, please replace the line there with:

Coupon Date\_X(I,J) = date of Jth coupon for X(I)

✓At page 15, equation (1), around line 10, please replace the equation there with:

$$\text{Price\_P(I)} = 100 - 100 \left( \frac{\text{Date\_P(I)} - \text{DD}}{360} \right) \text{Discount\_P(I)}$$

✓At page 15, line 16, please replace the equation beginning "X= ..." with:

$$X = 1 + \frac{rP(I)}{2}$$

✓At page 15, around line 18, please replace the equation beginning "Y= ..." with:

$$Y = \frac{\text{Date\_P(I)} - \text{DD}}{(\text{Coupon Date\_P(I, N+1)} - \text{Coupon Date\_P(I, N)})} ;$$

✓At page 15, before line 20, please insert:

AMENDED per A

100 is the face value of the security; and  
360 is the convention for the number of days in a year  
for a T-bill security.



✓At page 15, equation (3), around line 24, please replace the equation there with:

$$rP(I) = 2 * \left( \frac{1}{(1 - \frac{(\text{Date\_P(I)} - \text{DD}) * \text{Discount\_P(I)}}{360})^Z} - 1 \right)$$

✓At page 16, lines 1-7, please replace the paragraph there with:

Assuming a positive response to test 450, the security is coupon bearing and logic proceeds to block 500, et seq., for the discounting of the security and all of its associated coupons for the spot rate determination. The first step is to adjust the security price for accrued interest associated with the next coupon payment. This is accomplished with the following relationship:

✓At page 16, lines 13-25, please replace the paragraph there with:

At block 510, the system sets the number of remaining coupons associated with the instant security TC to act as a counter for the iterative ensuing processing. This is initiated by loop command 520, block 525 and test 530. At block 525 and test 530, the system determines whether the coupon date associated with the instant security matches the maturity date of a security in the P(I, N) database. If so, the spot rate for that coupon is calculated, as above, using the price data at block 535; if a match is not found with an existing maturing security, the system logic branches to block 540 and interpolates from existing maturity dates on either side of the coupon date. The use of linear interpolation is a reasonable approximation, as the maximum length of time between maturing securities is six months.

✓At page 16, lines 26-30, please replace the paragraph there with:

MEMENDED per A

After performing the operations at blocks 535 or 540, this process is repeated for each value of J, via block 550, and then the resultant data is used to calculate the spot rate for the Ith security,  $rP(I, N)$ , at block 560. This is repeated for the entire set of securities from the closing price data, at block 570, and stored for subsequent use, at block 580.

✓At page 17, lines 1-14, please replace the paragraph there with:

MEMENDED per A

Use of closing data from the Federal Reserve provides a complete set of data at a set point in time. After time, it becomes stale and needs to be updated rapidly with incoming asynchronous data on current transactions taking place in the market. This is accomplished via the flow path depicted in Fig. 4. Logic conceptually begins at start block 600 and inputs the data for the set of qualified actives in real time (i.e., within seconds of actual changes in a security price in terms of offer, bid and trade values) at block 610. The data for the actives  $A(I, N)$  is compared at test 620 to the existing proper set  $P(I, N-1)$  for the previous time cycle (N-1) to discern whether new information is available on an existing security. If yes, logic branches to block 630 and the new price data is used to update the spot rate for that security, via block 640.

✓At page 17, line 24 through page 18, line 3, please replace the paragraph there with:

MEMENDED per A

The spot rate data set, as continuously updated with new trading information, is used to price a generic portfolio of select securities as expressed in terms of price relating to par, yield to maturity (YTM) and duration. This is accomplished for the exemplary portfolio described above by the logic path presented in Fig. 5. Logic conceptually begins at start block 700, followed by test 710, which determines whether the data set is closing or updated continuously; if closing (yes to test 710), logic

proceeds to block 730 and the proper closing data on the term structure is used. If asynchronous (no to test 710), the update set of data is used, block 720.

✓At page 18, lines 4-14, please replace the paragraph there with:

MEMENDED per A

In either event, the previous index values for the portfolio are loaded, block 740, and then iteratively processed with the new market data. More particularly, the system iteratively determines the net present value for each of the four generic securities in the portfolio, via the counter in block 750, including each coupon, via the counter in block 760, by correlating the coupon and maturity dates for the generic issues with the data set for spot rates, via the counter in block 770; if a match occurs via test 780, the matching spot rate in the data set is used to calculate the NPV of the coupon, blocks 790 and 795. This is repeated for each coupon, J, via block 820, and each generic security in the portfolio, K, via block 830. If no match is found at test 780, the system tries the next security, via block 840.

✓At page 18, lines 15-21, please replace the paragraph there with:

MEMENDED per A

Once the NPV is set for all of the components in the portfolio, the system calculates the portfolio price, block 850, the yield to maturity, YTM\_F, block 860, and the portfolio duration, block 870. This information is displayed and made available to the associated network as an index, updated in real time by current price data, in a manner analogous to the S & P 500 and Dow Jones 30 Industrials at block 880.

✓At page 18, lines 22-29, please replace the paragraph there with:

MEMENDED per A

In a separate aspect of the present invention the foregoing index is used as the measure of current valuation in support of a futures market based on an underlying

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portfolio for the index. Through an interconnected data network augmented with access to centralized brokers by telephone connection, the system offers automated electronic executions of futures and options contracts on the index for, e.g., treasury notes and their corresponding cash security equivalents.

✓At page 18, line 30 through page 19, line 11, please replace the paragraph there with:

MEENDED per A

By viewing through vendors in real-time the price and yield of the portfolio, index traders, investors, pension fund managers, and other participants make determinations of market valuations of the duration sized portfolio. In so doing, bid, offer and execution decisions are implemented instantaneously by traders. These decisions are enacted through computer terminals that are interconnected through international data networks and processors to effectuate in real time the display of quantities for bids and offers and the "hitting" and "taking" of those bids and offers which then result in an executed trade. These trades are then electronically displayed and distributed to a clearing processor and at the same time to data vendors for redistribution to the worldwide financial community.

✓At page 19, lines 12-23, please replace the paragraph there with:

MEENDED per A

One function of the futures transaction processor is the determination of the least expensive portfolio of securities deliverable pursuant to a futures contract at the delivery date. Futures contracts based on the index determined above will require delivery of a combination of securities having 2, 3, 5 or 10 year maturities that, in combination, match the index duration and further comprise at most 50% of any one issue (e.g. 3 year notes). Given this criteria, at the delivery date, the system scans the market for 2, 3, 5 and 10 year notes, testing each

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combination of current issues to provide the least expensive matching combination and providing a delineation of the least expensive combination.

✓At page 19, lines 24-31, please replace the paragraph there with:

AMENDED per A The system attributes described above may be more clearly understood in the context of the flow chart depicted in Fig. 6. Beginning with block 900, the system collects in real time the market positions of participating fixed income security traders as expressed in their various bid, offer and trade price data. This information is collated and conformed to a common format, block 910, and coupled with the existing treasury database, block 920, to discern a futures conversion factor, block 930.

✓At page 20, lines 1-11, please replace the paragraph there with:

AMENDED per A The first operation is to organize the data into respective maturities that are associated with the specific index governing the futures contract obligations. This is represented by the selection processor, block 940. The data for each class of securities, i.e., 2, 3, 5 and 10 year maturities, is then sorted by price delineating the least expensive note within each class, block 950. The linear programming module, block 960, uses the sorted collection of notes in a minimalization algorithm that searches by trial and error for the least expensive portfolio that conforms to the delivery requirements of the futures contract.

✓At page 20, lines 12-24, please replace the paragraph there with:

AMENDED per A The least expensive portfolio data is distributed three ways; first it is provided through the data vendors, block 970, to the financial community. It is also directed to the options parameter processor, block 980, for support of the transactions on the various options exchanges. The

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least expensive portfolio data is finally processed forming a "basis" quantifying the difference between the least expensive portfolio and the index value, block 990. This information is likewise distributed to the various market participants and exchanges as diagrammed. In this manner, the actual real time index and least expensive portfolio values support the trading in futures and options contracts, with current valuation and delivery expense determinations.

#### In The Abstract

✓ Please amend the abstract by deleting lines 12-17 on page 25.

#### In The Drawings

Please approve the following amendments of FIGS. 2, 3, 5, and 6, which are indicated in red ink on the attached copies of sheets 2, 3, 5, and 6 of the drawings, so that formal drawings can be filed:

FIG. 2, delete reference numeral "260".

FIG. 2, move the "NO" indicator on test 310 from the right of the arrow connecting test 310 to test 330 to the left of that arrow.

FIG. 2, extend the arrow pointing downward from the bottom of test 330 so that it connects to the arrow connecting block 340 to block 350.

FIG. 3, in block 460, change "Price\_P(1,N)" to --Price\_P(I,N)--.

FIG. 3, in block 500, change "Price\_P(1,N)" to --Price\_P(I,N)--.

FIG. 3, delete the arrow connecting block 520 to test 530, add a block 525 between block 520 and test 530 that is labeled --COMPARE COUPON DATE\_P(I,J) TO MATURITY DATES OF SECURITIES IN DATABASE--, add an arrow from block 520 to block 525, and add an arrow from block 525 to test 530.

FIG. 3, in test 530, change the text from "COUPON DATE\_P(J)=DATE\_P(I)?" to --DOES COUPON DATE MATCH A MATURITY DATE--.

FIG. 3, delete the arrow connecting test 530 and block 550, and connect the arrow from block 540 directly to block 550.

FIG. 3, add a block 535 near the lower left of test 530 that is labeled --CALCULATE COUPON SPOT RATE--, add an arrow coming out of the left side of test 530 that is going into the top of block 535 and that is labeled --YES--, and add an arrow coming out of the bottom of block 535 that is going into the left side of block 550.

FIG. 4, in block 610, change "A(1,N)" to --A(I,N)--.

FIG. 4, in test 620, change "A(1,N)=P(1,N-1)" to --A(I,N)=P(I,N-1)--.

FIG. 4, in block 630, change "U(1,N)=A(1,N)" to --U(I,N)=A(I,N)--.

FIG. 4, in block 670, change "rU(1,N)" to --rU(I,N)--.

FIG. 5, in block 720, change "P(1,N)" to --P(I,N)--.

FIG. 5, in block 730, change "P(1,N)" to --P(I,N)--.

FIG. 5, in block 790, change "rF(K,J)- rP(1,N)" to --rF(K,J)=rP(I,N)--.

FIG. 5, in block 880, change "YTM" to --YTM\_F--.

FIG. 5, delete reference numeral "890".

FIG. 6, in block 900, change "PRICES" to --BIDS--.

FIG. 6, in block 910, change "SPEED PROCESSORS" to --COLLATE AND FORMAT--.

#### In The Claims

✓Please cancel claims 1-16 without prejudice.

✓Please add new claims 17-31 as follows:

ADDED  
per A  
CANCELLED  
per B

17. (New) A method of determining an index value associated with a portfolio, including at least one security, from market data for other securities, comprising:  
calculating a value for each of the other securities from market data that is indicative of market conditions for the other securities in a market for the other securities; and  
calculating the index value associated with the portfolio that includes the at least one security using each value for the other securities.

ADDED  
per A  
CANCELLED  
per B

18. (New) The method of claim 17, further comprising determining whether the market data for the other securities qualifies to be used for determining the index value.

ADDED  
per A  
CANCELLED  
per B

19. (New) The method of claim 18, wherein determining whether the market data for the other securities qualifies to be used for determining the index value comprises determining whether a spread for the other securities exceeds a maximum spread.

ADDED  
per A  
CANCELLED  
per B

20. (New) The method of claim 18, wherein determining whether the market data for the other securities qualifies to be used for determining the index value comprises comparing pricing data of different securities corresponding to the market data.

ADDED  
per A  
CANCELLED  
per B

21. (New) The method of claim 17, wherein calculating the value for each of the other securities based on the market data comprises calculating a spot rate for each of the other securities.

ADDED  
per A  
CANCELLED  
per B

22. (New) The method of claim 21, wherein calculating the spot rate for each of the other securities comprises calculating a spot rate for a coupon associated with one of the other securities.



ADDED  
per A  
CANCELLED  
per B

23. (New) The method of claim 21, wherein calculating the spot rate for the coupon comprises interpolating the spot rate for the coupon from a spot rate for another of the other securities.

ADDED  
per A  
CANCELLED  
per B

24. (New) The method of claim 17, further comprising updating the value for one of the other securities using more recent market data for the one of the other securities.

ADDED  
per A  
CANCELLED  
per B

25. (New) The method of claim 24, wherein the value for the one of the other securities is updated in substantially real time.

ADDED  
per A  
CANCELLED  
per B

26. (New) The method of claim 17, further comprising updating the value for the one of the other securities using more recent market data for another of the securities.

ADDED  
per A  
CANCELLED  
per B

27. (New) The method of claim 17, wherein calculating the index value using each value for the other securities comprises determining a net present value of the at least one security.

ADDED  
per A  
CANCELLED  
per B

28. (New) The method of claim 17, wherein calculating the index value using each value for the other securities comprises determining a net present value of a coupon associated with the at least one security.

ADDED  
per A  
CANCELLED  
per B

29. (New) The method of claim 17, wherein calculating the index value comprises calculating a price for the portfolio.

ADDED  
per A  
CANCELLED  
per B

30. (New) The method of claim 17, wherein calculating the index value comprises calculating a yield for the portfolio.

ADDED  
see A  
CANCELLED  
per X

31. (New) The method of claim 17, wherein calculating the index value comprises calculating a duration for the portfolio.

REMARKS

Introduction

This application is a continued prosecution application (CPA), filed July 31, 2000, of a continuation application, filed January 4, 1999. In the continuation application, an Office Action was issued on January 31, 2000. A Reply to the Office Action was not filed prior to filing this CPA application. Accordingly, these remarks will address the rejections and objections raised in the January 31, 2000 Office Action as well as the various amendments made by way of this Preliminary Amendment.

Summary Of Office Action

Claims 1-16 were pending in the continuation application at the time of the January 31, 2000 Office Action.

The Examiner objected to the abstract as being more than a single paragraph.

The Examiner rejected claims 1-11 under 35 U.S.C. § 101 as claiming the same invention (i.e., statutory double patenting) as claims 1-11 of Ginsberg U.S. Patent No. 5,857,176 (hereinafter "the '176 Patent") from which the continuation application and the present application claim priority. Claims 12-16 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of Ginsberg U.S. Patent No. 5,774,880 (hereinafter "the '880 Patent") from which the continuation application and the present application also claim priority. Claims 12-16 were also rejected under 35 U.S.C. § 101 as being directed to an abstract idea (or merely solving a mathematical problem) without limitation to a practical application. Claims 1 and 7 were also rejected

under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 12 and 13 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Towers U.S. Patent No. 4,566,066 (hereinafter "Towers"). Claims 14-16 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Towers and Tull, Jr. et al. U.S. Patent No. 5,946,667 (hereinafter "Tull").

Finally, the Examiner indicated that the Information Disclosure Statement filed on September 30, 1999 in the continuation application was misplaced from the file and requested that this document be resubmitted.\*

#### Summary Of The Preliminary Amendment

Applicant has amended the title to correct a typographical error. The specification has been amended to add a cross reference to the parent and grandparent applications, to more accurately reflect the drawings, and to correct typographical errors. The abstract has been amended to overcome the Examiner's objection. Amendments to FIGS. 2, 3, 4, 5, and 6 of the drawings have been proposed in order to correct typographical errors therein.

Applicant has canceled claims 1-16 without prejudice in order to overcome the Examiner's statutory and obviousness-type double patenting rejections and has added new claims 17-31 to more particularly define the invention.

Applicant has filed concurrently herewith a copy of the Information Disclosure Statement that was previously filed on September 30, 1999 and that was misplaced from file.

Applicant respectfully submits that this application, as amended, is in condition for allowance.

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\* The Examiner indicated that the Information Disclosure Statement was filed on October 4, 1999. Applicant respectfully submits, however, that this document was, in fact, filed on September 30, 1999.

### The Amendment To The Title

Applicant has amended the title of the invention on page 1 of the specification to correct a typographical error. Particularly, the title on page 1 was changed from "FIXED INCOME PORTFOLIO DATA PROCESSOR" TO "FIXED INCOME PORTFOLIO INDEX PROCESSOR". This amendment matches the title on page 1 to the title on the cover sheet of the application and the Filing Receipt. No new matter has been added by this amendment of the title.

### The Amendments To The Specification

Applicant has amended the specification to add a cross reference to the parent and grandparent applications of the present application, to more accurately reflect the drawings, and to correct typographical errors. These amendments add no new matter and are fully supported and justified by the specification and/or drawings. Markups of these amendments are provided in the Appendix attached hereto.

In accordance with 35 U.S.C. § 120, applicant has added the cross reference to the parent and grandparent applications before line 1 of page 1 in order to claim the benefit of the filing date of the grandparent application.

With reference to the amendments to make the specification more accurately reflect the drawings and the amendments to correct typographical errors, the following table indicates which amendments are to correct obvious typographical errors and, for all other amendments, where support and justification for the amendments can be found:

Amendment Location	Typographical Error, or Support and Justification
Page 1, line 9	Typographical Error
Page 1, line 15	Typographical Error
Page 2, line 1	Typographical Error
Page 2, line 13	Typographical Error

Amendment Location	Typographical Error, or Support and Justification
Page 3, line 27	Typographical Error
Page 4, line 4	Typographical Error
Page 7, line 27	Typographical Error
Page 8, line 24	FIG. 1, block 90
Page 8, line 28	FIG. 1, block 110
Page 11, line 16	FIG. 2, tests 230 and 270
Page 12, line 13	Typographical Error
Page 12, line 14	Typographical Error
Page 12, line 25	FIG. 2, tests 310 and 330, block 320
Page 12, line 28	FIG. 2, tests 290 and 330, and blocks 340 and 350
Page 14, line 25	Page 15, equation beginning "Y =", around line 18
Page 15, equation (1), around line 10	Typographical Error: the existing equation would be clearly erroneous to one of ordinary skill in the art as not indicating the price of the security, but rather the discount of the security. Moreover, the correct equation is well known. For a zero coupon security (such as a T-bill), the price is calculated as the face value of the security minus the face value multiplied by the interest rate for the security over the period remaining between the delivery date and the maturity date of the security. This is explained at page 1, line 27 through page 2, line 2.
Page 15, equation beginning "X =", around line 16	Typographical Error

Amendment Location	Typographical Error, or Support and Justification
Page 15, equation beginning "Y =", around line 18	Typographical Error: as indicated by the missing close-parenthesis in the denominator on the right side of the equation, the term "Coupon Date $P(I,N)$ " should be part of the denominator.
Page 15, before line 20	Page 15, equation (1), around line 10
Page 15, equation (3), around line 24	Typographical Error: the existing equation would be clearly erroneous to one of ordinary skill in the art as not being a solution to the other equations presented on page 15. The new equation is simply an accurate solution of those equations that can be found using basic algebra.
Page 16, line 1	FIG. 3, blocks 450 and 500
Page 16, line 16	In conjunction with the proposed amendment to FIG. 3
Page 16, line 19	Page 15, lines 13-25
Page 16, line 20	In conjunction with the proposed amendment to FIG. 3
Page 16, line 26 (first)	In conjunction with the proposed amendment to FIG. 3, and block 540 of FIG. 3
Page 16, line 26 (second)	Typographical Error
Page 16, line 27	Typographical Errors
Page 16, line 28	Typographical Error
Page 16, line 29	Typographical Error
Page 16, line 30	Typographical Error
Page 17, line 7	Page 11, lines 18-20
Page 17, line 9 (first)	FIG. 4, block 610
Page 17, line 9 (second)	Page 11, lines 18-20
Page 17, line 9 (third)	FIG. 4, block 620
Page 18, line 2	FIG. 5, block 710
Page 18, line 8 (first)	FIG. 5, block 750

Amendment Location	Typographical Error, or Support and Justification
Page 18, line 8 (second)	FIG. 5, block 760
Page 18, line 10	FIG. 5, block 770
Page 18, line 12	FIG. 5, blocks 790 and 795
Page 18, line 13	FIG. 5, block 820
Page 18, line 14	FIG. 5, block 830
Page 18, at the end of the paragraph ending at line 14	FIG. 5, test 780 and block 840
Page 18, line 17	FIG. 5, block 860
Page 18, line 21	Typographical Error
Page 18, line 27	Typographical Error
Page 18, line 28	Typographical Error
Page 18, line 31	Typographical Error; page 18, line 30 through page 19, line 2.
Page 19, line 12	Typographical Error
Page 19, line 14	Typographical Errors
Page 19, line 15	Typographical Error
Page 19, line 30	Typographical Error
Page 19, line 31	Typographical Error
Page 20, line 3	Typographical Error
Page 20, line 5	Typographical Error
Page 20, line 13	In conjunction with amendment to page 20, line 14; FIG. 6, block 970.
Page 20, line 14	In conjunction with amendment to page 20, line 13; FIG. 6, block 970.
Page 20, line 15	Typographical Error
Page 20, line 22	Typographical Error

Applicant's Reply To The  
Objection To The Abstract

The Examiner objected to the abstract as being more than a single paragraph. Applicant has amended the abstract of the invention by deleting the paragraph at lines 12-17 on page 25 of the application. This amendment of the abstract adds no new matter. As amended, the abstract is now a single paragraph. Accordingly, applicant respectfully requests that the objection to the abstract be withdrawn.

The Proposed Amendments To The Drawings

Applicant requests approval to make the above-mentioned amendments to the drawings to correct minor typographical errors in the drawings and to more accurately reflect the specification. Pursuant to MPEP § 608.02(r), these proposed amendments are also set forth in a separate Letter to Official Draftsperson which is being filed concurrently herewith. These proposed amendments would add no new matter and, as indicated in the following table, are fully supported and justified by the specification or are merely correct obvious typographical errors:

Amendment	Typographical Error, or Support and Justification
FIG. 2, delete reference numeral "260"	Reference numeral "260" not mentioned in specification
FIG. 2, move location of "NO" indicator	Typographical Error
FIG. 2, extend the arrow pointing downward from test 330	Typographical Error
FIG. 3, block 460	Typographical Error
FIG. 3, block 500	Typographical Error
FIG. 3, delete arrow connecting blocks 520 and 530, and changes associated with new block 525	Page 16, lines 16-19
FIG. 3, test 530	Page 16, lines 16-23



Amendment	Typographical Error, or Support and Justification
FIG. 3, delete arrow connecting test 530 and block 550, and connect arrow from block 540 directly to block 550	In conjunction with addition of block 535 to FIG. 3.
FIG. 3, add a block 535 and corresponding arrows	Page 16, lines 16-23
FIG. 4, block 610	Typographical Error
FIG. 4, test 620	Typographical Error
FIG. 4, block 630	Typographical Error
FIG. 4, block 670	Typographical Error
FIG. 5, block 720	Typographical Error
FIG. 5, block 730	Typographical Error
FIG. 5, block 790	Typographical Error
FIG. 5, block 880	FIG. 5, block 860 and page 18, lines 15-18
FIG. 5, delete reference numeral "890"	Typographical Error
FIG. 6, block 900	Page 19, lines 26-28
FIG. 6, block 910	Page 19, lines 29-30

Applicant's Reply To The Rejections Of The Claims

The Examiner rejected claims 1-11 under 35 U.S.C. § 101 as claiming the same invention (i.e., statutory double patenting) as claims 1-11 of the '176 Patent from which the present application claims priority. Claims 12-16 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of the '880 Patent from which the present application also claims priority. Claims 12-16 were also rejected under 35 U.S.C. § 101 as being directed to an abstract idea (or merely solving a mathematical problem) without limitation to a practical application. Claims 1 and 7 were also rejected under 35 U.S.C. § 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 12 and 13 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Towers. Claims 14-16 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Towers and Tull.\*

Applicant has canceled claims 1-16 without prejudice in order to overcome the Examiner's statutory and obviousness-type double patenting rejections. Accordingly, applicant respectfully requests that the rejections of these claims be withdrawn.

#### New Claims 17-31

Applicant has added new claims 17-31 to more particularly define the invention. These claims are fully supported by the specification and add no new matter.

Applicant respectfully submits that new claims 17-31 are allowable over the references cited for at least the reason that these claims are directed to calculating an index value for a portfolio including at least one generic security from market data for other securities. Turning to claim 17, it can be seen that the claims all require:

calculating a value for each of the other securities from market data that is indicative of market conditions for the other securities in a market for the other securities;  
and

calculating the index value associated with the portfolio that includes . . . at least one security using each value for the other securities

(emphasis added).

Towers, on the other hand, discusses calculating a portfolio value for a portfolio of stocks based on the market data of the same stocks. Nowhere in Towers is it shown or suggested

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\* Applicant respectfully submits that Tull is not prior art to the present application as the earliest priority date of Tull is April 6, 1994, whereas the present application, as amended, is entitled to a priority date of June 10, 1992.

to calculate the value of a portfolio, that includes at least one security, based upon market data of other securities. Because Towers fails to show or suggest calculating an index value for a portfolio including at least one security from market data for other securities as claimed, applicant respectfully submits that claims 17-31 are not anticipated or made obvious by Towers.

With regard to the other reference cited in the Office Action, i.e., Tull, applicant respectfully submits that this reference is not prior art to the present application in light of the priority claim added herein under 35 U.S.C. § 120.

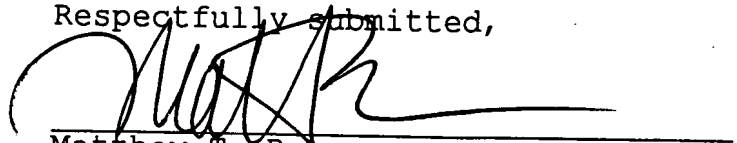
In light of the Examiner's rejection of now-canceled claims 12-16 under 35 U.S.C. § 101 as being directed to an abstract idea (or merely solving a mathematical problem), applicant also respectfully submits that new claims 17-31 are at least patentable subject matter because they fall within the safe harbor set forth in MPEP § 2106(IV)(B)(2)(b)(i) relating to "Manipulation of Data Representing Physical Objects or Activities (Pre-Computer Process Activity)". For at least the reason that claims 17-31 relate to "activities to be transformed outside of the computer into computer data" (MPEP § 2106(IV)(B)(2)(b)(i)), e.g., "market data that is indicative of market conditions for the other securities in a market for the other securities" (claim 17), these claims are statutory.

Accordingly, applicant respectfully submits that claims 17-31 are in condition for allowance.

Conclusion

For at least the reasons set forth above, applicant respectfully submits that this application, as amended, is in condition for allowance. Accordingly, reconsideration and prompt allowance of this application are respectfully requested.

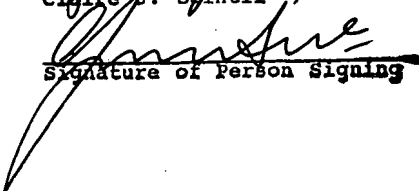
Respectfully submitted,



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I Hereby Certify that this  
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WASHINGTON, D.C. 20231 on

February 20, 2001  
Claire J. Spantil



Signature of Person Signing

APPENDIX  
MARKUPS OF AMENDMENTS

In The Specification

Please amend the specification as follows:

Page 1, before line 1, insert: --

CROSS REFERENCE TO RELATED APPLICATIONS

This is a continuation of copending, commonly assigned United States Patent Application No. 08/396,422, filed February 28, 1995, now United States Patent No. 5,774,880, issued June 30, 1998, which is a file wrapper continuation of United States Patent Application No. 07/897,377, filed June 10, 1992, now abandoned.

FIELD OF THE INVENTION--.

Page 1, line 9, change "FIELD" to --BACKGROUND--.

Page 1, line 15, change "This" to --These--.

Page 1, line 15, change "is one" to --are some--.

Page 2, line 1, after "discount" insert --being--.

Page 2, line 13, change "tenant" to --tenet--.

Page 4, line 4, change "makes" to --make--.

Page 7, line 27, change "the" to --a--.

Page 8, line 24, change "data, at block 90.

System" to --data. At block 90, system--.

Page 8, line 28, before "the" insert --at block 110,--

Page 11, line 16, change "240" to --270--.

Page 12, line 13, delete "seconds".

Page 12, line 14, delete "seconds".

Page 12, line 25, change "330" to --330, which is performed after performing block 320 or after a negative response to test 310,--.

Page 12, line 28, change "At" to --After removing disqualified data at block 340, determining a negative response to test 330, or determining a negative response to test 290, at--.

Page 14, line 25, change "Coupon Date\_X(I,1,J)" to --Coupon Date\_X(I,J)--.

Page 15, equation (1), around line 10, change the equation from:

$$\text{Price\_P(I)} = 100 \frac{(\text{Date\_P(I)} - \text{DD})}{360} \text{Discount\_P(I)}$$

to:

$$\text{Price\_P(I)} = 100 - 100 \frac{(\text{Date\_P(I)} - \text{DD})}{360} \text{Discount\_P(I)}$$

Page 15, equation beginning "X =", around line 16, delete "and".

Page 15, equation beginning "Y =", around line 18, change the equation from:

$$Y = \frac{\text{Date\_P(I)} - \text{DD}}{(\text{Coupon Date\_P(I,N+1)} - \text{Coupon Date\_P(I,N)})}$$

to:

$$Y = \frac{\text{Date\_P(I)} - \text{DD}}{(\text{Coupon Date\_P(I,N+1)} - \text{Coupon Date\_P(I,N)})} ;$$

Page 15, before line 20, insert:

100 is the face value of the security; and

360 is the convention for the number of days in a year for a T-bill security.

Page 15, equation (3), around line 24, change the equation from:

$$rP(I) = Z * \left( \frac{1}{\left( 1 - \frac{\text{Discount\_P(I)}}{100} \right) \frac{(\text{Date\_P(I)} - \text{DD})}{360}} - 1 \right)$$

to:

$$rP(I) = 2 * \left( \frac{1}{\left( 1 - \frac{(\text{Date\_P(I)} - \text{DD}) * \text{Discount\_P(I)}}{360} \right)} Z - 1 \right)$$

Page 16, line 1, change "negative" to --positive--.

Page 16, line 16, before "and" insert --block 525--.

Page 16, line 16, after "At" insert --block 525 and--.

Page 16, line 19, after "rate" insert --for that coupon--.

Page 16, line 20, change "data;" to --data at block 535;--.

Page 16, line 24, change "maturity" to --maturing--.

Page 16, line 26, change "This" to --After performing the operations at blocks 535 or 540, this--.

Page 16, line 26, before "block" insert --via--.

Page 16, line 27, change "with" to --then--.

Page 16, line 27, after "data" insert --is--.

Page 16, line 28, before "block" insert --at--.

Page 16, line 29, before "block" insert --at--.

Page 16, line 30, before "block" insert --at--.

Page 17, line 7, before "set" insert --data for the--.

Page 17, line 9, after "values)" insert --at block 610--.

Page 17, line 9, change "Active" to --data for the actives--.

Page 17, line 9, after "compared" insert -- at test 620--.

Page 18, line 2, change "asynchronous," to --asynchronous (no to test 710),--.

Page 18, line 8, after "portfolio," insert --via the counter in block 750,--.

Page 18, line 8, change "coupon" to --coupon, via the counter in block 760,--.

Page 18, line 10, change "rates;" to --rates, via the counter in block 770;--.

Page 18, line 12, change "block 790, et seq." to --blocks 790 and 795.--.

Page 18, line 13, after "J," insert --via block 820,--.

Page 18, line 14, change "K." to --K, via block 830.--.

Page 18, at the end of the paragraph ending at line 14, insert:

--If no match is found at test 780, the system tries the next security, via block 840.--.

Page 18, line 17, change "YTM" to --YTM\_F--.

Page 18, line 21, before "block" insert --at--.

Page 18, line 27, before "on" insert  
 --contracts--.

Page 18, line 28, change "for e.g." to --for,  
 e.g.,--.

Page 18, line 28, change "its" to --their--.

Page 18, line 31, change "treasury note" to  
 --portfolio--.

Page 19, line 12, change "future" to --futures--.

Page 19, line 14, change "the future" to --a  
 futures--.

Page 19, line 15, change "Future" to --Futures--.

Page 19, line 30, change "910" to --910,--.

Page 19, line 31, change "920" to --920,--.

Page 20, line 3, change "future" to --futures--.

Page 20, line 5, change "maturities" to  
 --maturities,--.

Page 20, line 13, change "provided to" to  
 --provided through--.

Page 20, line 13, change "vendors" to --vendors,  
 block 970--.

Page 20, line 14, change "community, block 970" to  
 --community--.

Page 20, line 15, change "980" to --980,--.

Page 20, line 22, change "future and option" to  
 --futures and options--.